

Pop Rocket Design Project

**Introduction:** Rockets are used for [fireworks](http://en.wikipedia.org/wiki/Fireworks), [weaponry](http://en.wikipedia.org/wiki/Weapon), [human spaceflight](http://en.wikipedia.org/wiki/Human_spaceflight) and [space exploration](http://en.wikipedia.org/wiki/Space_exploration). They have been used over the past 60 years to propel spacecraft out of [Earth's](http://library.thinkquest.org/C0110484/content.php?hanle=earth) gravitational field, enabling space exploration and feeding our curiosities about how far humans can travel. This exploration has led to inventions such as cordless power drills, barcoding, digital cameras, smoke detectors, MRI equipment and thermal gloves. In the future, space tourism is set to become popular and rockets might be required if humans colonise another planet.

**Task:** You will work in pairs to design a pop rocket. Firstly, you will observe a test run conducted by the teacher and document the steps involved.

In the second phase, you will decide on

1. What experiment you would like to conduct (what variables you will use)
2. What steps you will perform during your experiment
3. Modifications to the test run rocket

This information must be documented and approved by the teacher before the experiment can proceed.

In the final phase, you will perform the experiment, document results, suggest design improvements and answer assessment questions.

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| **MATERIALS USED** |

**PHASE ONE**

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| **DIAGRAM OF STEPS** |

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| **QUESTIONS** |

**PHASE TWO**

Checklist (please provide each of these items as part of your project report)

* Choose dependent variable
* Choose independent variable
* Identify the control variables
* Design experiment (list variables, provide procedure steps)
* Design pop rocket with diagram

**PHASE THREE**

Write a report of your experiment using the following titles

* Hypothesis
* Materials
* Procedure
* Data (Results)
* Conclusion
* Further Ideas or Questions